THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI-15
(A Govt. Aided Autonomous Institution affiliated to Anna University)
- where quality and ethics matter

IOT BASED PRODUCT RECOMMENDATION SYSTEM USING MACHINE LEARNING

GUIDE :
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MAJOR AREA :

The major area chosen for the project is Internet Of Things(IoT).

- The Internet of Things (IoT) is a massive network in which numerous physical items equipped with sensors and software are linked to the Internet and share data with one another about how they are utilized and the environment in which they function.
- The sensors continually transmit data about the operational status of the devices through the network. IoT allows devices to communicate real-time data without the need for human interaction.
- Furthermore, with the help of IIoT and RFID, organizations may overcome the complexity associated with manual procedures and monitor inventories in real-time.

SUB AREA :

The sub area chosen for the project is Machine Learning .

- There are several types of product recommendation systems, each based on different machine learning algorithms which are used to conduct the data filtering process.

- There are three basic types of connection a product recommendation system creates:
- 1. User-product relationships
- 2. User-user relationships
- 3. Product-product relationships

- It’s the third kind of relationship that we intend to recommend in our project which is achieved through machine learning.

BASE PAPERS :

TITLE	AUTHOR	PUBLICATION YEAR
Automated Shopping Cart Using RFID with a Collaborative Clustering Driven Recommendation System	1)Ruchi Gupte 2)Shambhavi Rege 3)Sarah Hawa 4)Dr. Y S Rao 5)Dr. Rajendra Sawant	2020
Smart Trolley for Smart Shopping with an Advance Billing System using IoT	1)S.K. Shankar 2)Balasubramani S 3)S Akbar Basha 4)Sd Ariz Ahamed 5)N Suneel Kumar Reddy	2021
Product Recommendation System for Supermarket	1)Pranavi Satheesan 2)Prasanna S. Haddela 3)Jesuthasan Alosius	2020

PROBLEM STATEMENT :

The problem faced by the offline store owners is the lack of data and insights on customer preferences and behavior. This can make it difficult for them to make informed decisions on inventory, promotions, and marketing strategies and to recommend products based on the availability of the current stocks and arrival of new stocks . An IoT-based recommendation system using machine learning could help store owners collect and analyze data on customer interactions and preferences, and provide personalized recommendations for products and promotions to the store owners and make the most sold and it's related products always av available . This would help store owners increase sales and improve customer satisfaction.

OBJECTIVES:

- To recommend a particular product and all of it's related products based on the availability of current stocks and arrival of new stocks.

- To automate the billing process instead of waiting for long queues at stores.

- To manage the stocks better by collecting the necessary information such as the goods sold , available goods and to recommend the frequently sold products and their related products.

- To implement better marketing strategies , to increase the sales of goods and services and make the business profitable.

TOOL IDENTIFICATION:

- **FRONT END TOOLS :** HTML , CSS , Javascript , Bootstrap
- **BACK END TOOLS :** Firebase , Python Flask
- **Machine Learning** using **Python**
- **Arduino IDE**
- **IoT SIMULATION TOOL :** Wokwi